

## **Intellectual Capital Drivers Affecting Business Profit Performance and Future Value Creation – A study W.R.T. Software and Pharmaceutical Companies IT, Bengaluru**

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### **Abstract**

Every country has realised the supremacy of intellectual capital (IC) in this knowledge based economy. IC is used to create and enhance organisational value and it natural that the progressiveness of an organisation much depends upon how best they manage the available scarce resources. Through proper knowledge creation organisations are competing to create more performance profit and future value creation. The report of Organisation for Economic Co-operation and Development (OECD) suggest that knowledge is significant source of social and economic development in society. Public and corporate investment in the development human capital in the form of education and training will become a crucial engine for growth exclusively in countries where knowledge - intensive attitudes are preferred. To measure the impact of IC on firms performance, profitability a questionnaire was administered as schedule and the bipolar opinions of respondents were collected, tabulated and tested through quantitative metrics. The study reveals employees are aware of benefits of IC and its impact on performance profit and productivity. The study established a direct relationship between the elements of IC and business performance, profitability and productivity.

**KEYWORDS:** Performance, productivity, profitability, Measuring IC, Competitive advantage.

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### **Introduction**

The financial reports or statements of the company are not able to capture the intellectual assets of the company. A variety of measures were used to calculate the amount of intellectual assets present in the organisation and the method deployed was annual reports especially the balance sheet. Measuring intellectual capital is very difficult. Innumerable tools that are proposed and their reliability of instrument still depends on the industry characteristics and objectives of information. (William S. Chang, 2011).

Over the last decade, researchers and academicians has drawn the attention of the role of knowledge in business development. For organisational sustainability and competitive advanced management of knowledge is the source. The writings by Thomas Stewart 1991 which were published in Fortune Magazine that it was well understood that IC is the lever for organisations to acquire competitive advantage and sustainable performance (Edvinsson & Sullivan 1996, Ross and Ross 1997).

## Objectives

- 1) To study the demographic profile of the respondents.
- 2) To analyse the intellectual variables impacting profit.
- 3) To analyse the influence of value added intellectual capital as firms performance.
- 4) To analyse the future value creation and better understand of intellectual capital through West techniques.

## Hypotheses

1. The demographic variables do not influence either on profits, firms performance and future value creation.
2. Intellectual variables are not, impacting profits.
3. Value added intellectual capital is not influencing firms performance.
4. Future value can not be created and no better understand of intellectual capital through latest techniques.

## Research Methodology

### Sample of the study

Bill Godden formula for finding the number of sample was followed and accordingly 600 sample is fixed in case the universe exceeds 50000.

$SS = \text{infinite where population is } > 50,000$

$SS = Z^2 \times (P) \times (i-p) / c^2$

$Z = Z \text{ valueA (e.g. 1.96 for a confidence level)}$

$P = \text{Percentage of population picking a choice, expressed as decimalB.}$

$C = \text{Confidence interval, expressed as decimal.}$

(e.g. 0.04 = +/- 4 percentage points)

AZ values (Cumulative Normal Probability Table)

1.645 = 90% Confidence level

1.96 = 95% Confidence level

2.576 = 99% Confidence level

$SS = 3.8416 \times 0.5 \times 0.5 / 0.0016 = 0.9604 / 0.004$

= 600.25 or 600.

### Sample Table

Type of company	No. of Co's	No. of approached	Total Respondents
Software companies	10	30	300
Pharmaceutical areas	10	30	300
Total	20		600

### Sampling Technique

Convenient sampling technique was followed in approaching the respondents. Respondents were requested to provide information by answering the questions mentioned in the questionnaire. Questionnaire was distributed after conducting a pilot study to see whether questions asked were sufficient and correct and as per the

experience the final questionnaire was reframed. Likert 4 and 5 point scale was adopted in framing the questionnaire.

### **Data collection**

The study considered both primary and secondary data. Primary data collected through a well structured questionnaire. Secondary sources may be research papers, websites and books written by different authors. The collected data was tested by applying Chi-square and ANOVA quantitative metrics which variables both validity and scientific testing.

### **Review of literature**

Vijayabanu et al. (2016) have stated that knowledge management practices can be followed in pharma industry for protecting the inherent knowledge and to enhance the performance. Further, they have stated that protection of explicit and tacit knowledge is vital in today's competitive scenario. The strategy of building knowledge management impacts employees, business operation and prevention of knowledge erosion.

Luminita et al. (2015) expressed that their investigation into impact of human, structural and relational capital and intellectual capital in Romanian distribution of drinking water firms. The study reveals the inter dependencies between the three elements of IC and how they affect performance.

Liviu CRACIUN et al. (2008) have stated that evaluation methods of IC will become absolutely necessary in the future in order to explain the way in which the IC creates value. Further, they have expressed that top companies will change the focus on the performance measuring system elaborated in the past, century because these are no longer relevant in today's economy. Ideas and matter are more than capital. Managers should take initiation of measuring, managing and distribute the information with reference to organization generating values for stakeholders and employees.

Paula FRUSINOIU et al. (2017) stated that IC management is a modern management approach that brings about changes in the public organisation as it provides a new perspective on organisations functions and purposes and stresses the relations between organisational resources and the environment. Further, they have stated managers has to raise awareness of the role of IC management within the organisations and stress common goal of IC regarding that it is the accurate prospective on institutional resources and better communication within the stakeholders.

Bader Yousef Obeidat et al. (2017) have highlighted in their research study the presence of positive relationship performance. These findings are in consistent with the findings of Kno, T(2011) Garakhami, D. et. al. (2012). The findings indicates the IC components of human, structural and relational capital lead to higher levels of knowledge showing company wide. The knowledge to enhance and boost organisational benefits of applying IC strategy.

### **Survey Findings**

Table-1 reveals data about demographic profile of respondents. Out of 600 respondents 480 are males and the remaining 20% are females. Chi-square statistical tool fails to

accept the H<sub>0</sub> and accepts H<sub>1</sub> that there is significant variation in the data. 520 respondents are married and the remaining 80 are single. Chi-square metric fails to accept the H<sub>0</sub> that there is no significant variation in the data and accepts the alternative that there exist significant variations in the data. There are 150 respondents who are in the age group of 33-37 years, 120 in the group of 38-42, 100 in the 43-46, 90 belongs to the age group of 47 and above, 60 belongs to 28-32 years. Chi-square metric fails to accept the H<sub>0</sub> and accepts the alternative that there exists significant variation in the data.

Table also provides data on qualification of respondents. 180 respondents are general degree holders followed by 160 are post graduates, 90 engineering graduates, CA and ICWA professional degree holders, 80 completed PUC, 50, 10th Pass and 40 are law LLM graduates. Chi-square test fails to accept null hypotheses that there exists no significant variation in the data and accepts the alternative that there exists significant variation in the data. There are 160 respondents who have put in a service of >10 years, 140 in between 6-10 years, 120 in between 3-5 years, 100 in between 1-2 years. Chi-square fails to accept the H<sub>0</sub> and there is no significant variations in the data and accepts the alternative that there exists significant variation in the data. Regarding monthly income of respondents the table reveals that there are 170 respondents getting a monthly income in the range of Rs. 41K-50K, 130 in between 51K-60K, 80 in between 31K-40K, 70 in between 21K-30K, 50 in between 11K-20K, and 40 respondents getting Rs <10K and 20 getting > 70 K per month. Chi-square statistical tool fails to accept the H<sub>0</sub> that there is no significant variations in the data and accepts the alternative that there exist significant variation in the data.

Table-2 reveals data about intellectual variables impacting profits. These variables varies from quality impactness to facing global situation. 322 respondents out of 600 strongly agree over the variables impacting profits, followed by 215 agree, 35 some what agree and 28 disagree. Out of 322 respondents who strongly agree 51 said about better environment, 50 about quality impactness, 49 facing the global competition, 45 each about satisfied consumers, use of high grade technology, 44 about contemplated employees and 38 about availability of both skilled and unskilled labour. Out of 215 respondents who said agree, 38 said about use of high grade technology, 33 about facing global competition, 32 quality impactness, 30 about better environment 28 each about satisfied consumers, and availability of both skilled and unskilled labour, 26 about contemplated employees.

35 respondents expressed some what aware and out of 35, 6 said about facing the global competition and further 6 each about quality impactness and better environment. 5 each respondents stated about contemplated employees and availability both skilled and unskilled labour. Out of 28 who said disagree, 7 said about availability of both skilled and unskilled labour, 5 about use of high grade technology, and 4 each about satisfied consumer and facing global competition. 28 respondents disagree over the variables impacting profits. ANOVA quantitative metric tool failed to accept H<sub>0</sub> and accepts H<sub>1</sub>. Therefore it is concluded here that exist significant variation in the data and respondents are aware of IC factors affecting profits.

Table-3 speaks about influence of VAIC on firms performance. These drivers varies from establishing better relation with customers, supplies etc. to aiming at better employee

performance with quality and quantity of work achieved by employees in carry out the responsibility. 295 respondents out of 600 strongly agree over the drivers impacting firms performance followed by 250 agree, 30 some what agree and 26 are neutral. Out of 295 who said strongly agree, 65 said about a firm, with VAIC apply knowledge through creation, capture and leverage and here shows better performance, 62 aid about fortunes can be increasds, 60 about better relationship, 55 about better mangement and better performance, 53 about better employee performance. Out of 250 who said agree 55 said about fortunes can be increasds through knowledge, 53 about better employee performance, 51 about better relation with customers, suppliers, brand names, trade marks and reputation leading to better performance, 46 about better management and better performance, and 45 about creation, capture and leverage of knowledge. Out of 30 respondents who said some what agree 7 each said about increased fortunes and better employee performance, about knowledge creating, capturing and leveraging and hence shows better performance and 5 each about better relationships and better management and better performance. 25 respondents stood neutral over the impacting factors of profit. ANOVA quantitative fails to accept H0 and accepts H1. Therefore it is concluded here that there exist significant variation in the data and respondents are aware of VAIC factors impacting firms performance.

Table-4 highlights about future value creation and better understand of IC through latest techniques. 340 respondents out of 600 strongly agree followed by 200 agree, 15 neutral, 25 disagree and 20 strongly disagree. Out of 340 respondent said strongly agree, 80 said about measure IC, 70 about identity IC of organisation, 65 each about trace the key factors value, and manage IC, 60 about report IC to the stakeholders. Out of 200 who said agree, 53 said about measure the IC, 45 about identity the IC of organisation, 37 about manage IC, 35 about trace the key factors of value, 30 about report the IC to the stakeholders. Out of 15 who stood neutral 5 said about measure the IC 3 each about identity IC of the organisation and 3 about report the IC to the stakeholders. Out of 25 who said disagree, 8 said about measure the IC, 6 about identity IC of the organistaion and 5 about manage IC. Out of 20 strongly disagree, 6 said about measuer the IC, 4 each about identity IC of organisation and manage IC. ANOVA quantitative metric fails to accept H0 and accepts H1. Therefore it is concluded here that there exist significant variation in the data and respondents are aware of future drivers of value creation.

## Conclusion

This present research started with an intention of measuring demographic profile of customers, intellectual variables impacting profit, influence of VAIC on firms performance and about future value cration and a better understand of IC through latest technologies. Since Bengaluru is fastest growing metro and web of IT sector and a rising star in the areaof IT, and pharma industrial center, firms have given atmost value for the intellectual capital. Firms have realised of late that management of intangible assets is also equally important and hence priority has given to knowledge which is the heart of creation of intellectual capital.

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**Table - 1 : Demographic Profile of the respondents**

Variable	No. of Respondents	%	$\chi^2$ value
<b>1. Gender</b>	Male	480	80 = 216 & sig = 5%
	Female	120	20 The calculated value being higher than the tv = 3.841, df = 1 fails to accept that there is no significant variation in the data & accepts H1.
<b>2. Marital Status</b>	Married	520	87 = 322.67, sig. = 5%
	Single	80	13 The calculated value being higher than the TV=3.841 fails to accept H0 i.e., that there is no significant variation in the data and accepts H1
<b>3. Age(in years)</b>	18 - 22	30	5 =123.35411
	23 - 27	50	8 the calculated value being

	28 - 32	60	10	123.3544 higher than the
	33 - 37	150	25	$t_v = 12.952$ @ 5% level
	38 - 42	120	20	of significance with $df = 6$
	43 - 46	100	17	fails to accept the $H_0$ that
	47 and above	90	15	is there is no significant
				variation in the data and
				accepts alternative that
				there exist variation.
<b>4. Qualification</b>	10th standard	50	8	= 160
	PUC	80	13	The calculated value
	General Degree	180	30	being 166 higher than
	BA, BCom, BBA, etc.			$TV = 11.070$ with $df = 5$
	Post Graduation	160	27	and at 5% level of
	M.Com., MA, MCA etc.			significance fails to
	Engineering, CA, ICWA	90	15	accept $H_0$ i.e., there exist
	Law/LLM graduates	40	7	no significant variation in
	Total	600	100	the data and accepts
				alternative that there
				exists significant variation
				in the data.
<b>5. Present Employment with service in yrs.</b>	< 1 year	80	13	= 33.333
	1 - 2 years	100	17	The calculated value
	3 - 5 years	120	20	being higher than the
	6 - 10 years	140	23	$TV = 11.070$ @ 5% level
	> 10 years	160	27	of significance with $df =$
	Total	600	100	5 fails to accept $H_0$
				to that there is no
				significant variation in the
				data and accepts the
				alternative that there
				exist variation.
<b>6. Monthly Income (in Rs)</b>	< Rs. 10K	40	7	= 242.6664
	11K - 20K	50	8	The calculated value being
	21K - 30K	70	12	242.6664 higher than the
	31K - 40K	80	13	$TV = 14.067$ @ 5% level
	41K - 50K	170	28	of significant with $df = 7$
	51K - 60K	130	22	fails to accept $H_0$ and
	61K - 70K	40	7	accepts the alternative
	> 71K	20	3	that there exist significant
	Total	600	100	variation in the data.

Source: Field Survey

**Table-2 : Intellectual variables impacting profit**

Drivers of profit	SA	A	SWA	DA	T
Quality impactness	50	32	6	3	91
Satisfied consumers	45	28	3	4	80
Contempered employees	44	26	5	3	78
Better environment	51	30	6	2	89
Age of highgrade technology	45	38	4	5	92
Availability of both skilled and unskilled labour	38	28	5	7	78
Facing the global competition	49	33	6	4	92
Total	322	215	35	28	600

Source : Field Survey

Note: SA - Strongly Agree, A - Agree, SWA - Somewhat Agree, DA - Disagree

**Hypotheses**

H0	There exist no significant variation in the data	Reject
H1	There exists significant in the data	Accept

**ANOVA Table**

Source of variation	SS	df	MS	F-ratio	5% - F Limit (From F Table)
Between the sample	8844.8731	(4-1)=3	8844.8731/3 =2948.291	2948.291/11.4 =258.022	
Within the sample	273.6687	(28-4)=24	273.6687/24 =11.4		(3, 24) =3.01
Total	9118.5418	(28-1)=27			

Source : Field Survey

**ANOVA Analysis**

The calculated value being 258.622 being higher than the TV = 3.01 at 5% level of significant with  $df = v1 = 3$  and  $v2 = 24$  fails to accept H0 and accepts the alternative.

**Table 3 : Influence of value added IC on firms performance**

Variables impacting of VAIC on firms performance	SA	A	SWA	N	T
A firm with VAIC have better relation with customers, suppliers, brand names, trade marks and reputation that leads to better performance	60	51	5	4	120
Firm with VAIC possess better management and hence better performance	55	46	5	6	112
A firm with VAIC apply knowledge and hence the fortunes can be increased through knowledge	62	55	7	4	128
A firm with VAIC apply knowledge through creation capture and leverage and hence shows better performance	65	45	6	6	122
A firm with VAIC aims at better employee performance with quality and quantity work achieved by employee in carrying out the responsibility	53	53	7	5	118
Total	295	250	30	25	600



Source : Field Survey

Note: SA - Strongly Agree, A - Agree, SWA - Some What Agree, N - Neutral

**Hypotheses**

H0	There exist no significant variation in the data	Reject
H1	There exists significant in the data	Accept

**ANOVA Table**

Source of variation	SS	df	MS	F-ratio	5% - F Limit (From F Table)
Between the sample	12210	(4-1)=3	12210/3 =4070	4070/11.375 =357.8	
Within the sample	182	(20-4)=16	118/16 =11.375		(3, 16) =3.24
Total	14984	(20-1)=19			

Source : Field Survey

The calculated value being 357.8 being higher than the TV = 3.24 at 5% level of significant with df = v1 = 3 and v2 = 16 fails to accept H0 and accepts the alternative H1.

**Table-4 : Future value creation and better understood of IC through latest techniques.**

Drivers of future value creation	SA	A	N	DA	SDA	T
Identify IC of the organisation interviews workshops	70	45	3	6	4	128
Trace the key factors of value	65	35	2	4	3	109
Measure the IC (whether increasing or decreasing)	80	53	5	8	6	152
Manage IE (measure the risk)	65	37	2	5	4	113
Report the IC to the stakeholders	60	30	3	2	3	98
Total	340	200	15	25	20	600

Source : Field Survey

Note: SA - Strongly Agree, A - Agree, N - Neutral, DA - Disagree, SDA - Strongly Dis Agree

**Hypotheses**

H0	There exist no significant variation in the data	Reject
H1	There exist significant variation in the data	Accept

**ANOVA Table**

Source of variation	SS	df	MS	F-ratio	5% - F Limit (From F Table)
Between the sample	16970	(5-1)=4	16970/4 =4242.5	4242.5/29.5 =143.81	
Within the sample	590	(25-5)=20	590/20 =29.50		(4, 20) =2.85
Total	17560	(20-1)=19			

Source : Field Survey

**ANOVA Analysis**

The calculated value being 143.81 being higher than the TV = 2.87 at 5% level of significance with df = v1 = 4 and v2 = 20 fails to accept H0 and accepts H1.